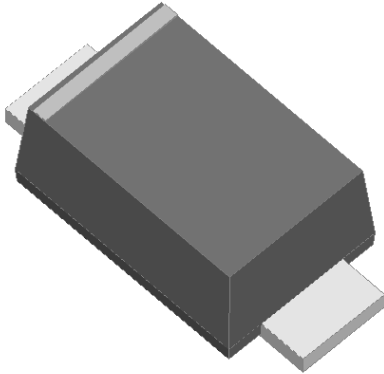


Surface Mount General Purpose Rectifier

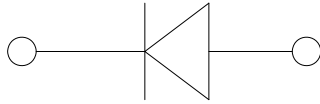


Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Part no. with suffix "Q" means AEC-Q101 qualified

Typical Applications

For use in general purpose rectification of power supplies, inverters, converters, and freewheeling diodes for consumer, automotive and telecommunication.



Mechanical Data

- **Package:** SOD-123FL
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

■ Maximum Ratings (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	G1AQ	G1BQ	G1DQ	G1GQ	G1JQ	G1KQ	G1MQ	
Device marking code			G1A	G1B	G1D	G1G	G1J	G1K	G1M	
Repetitive peak reverse voltage	V _{RRM}	V	50	100	200	400	600	800	1000	
Maximum RMS voltage	V _{RMS}	V	35	70	140	280	420	560	700	
Maximum average forward rectified current at T _L (Fig.1)	I _{F(AV)}	A	1.0							
Surge(non-repetitive)forward current @ 60Hz half-sine wave,1 cycle, T _J =25°C	I _{FSM}	A	30							
Current Squared Time @1ms≤t<8.3ms T _J =25°C	I ² t	A ² s	3.7							
Storage temperature	T _{STG}	°C	-55 ~+175					-55 ~+150		
Junction temperature	T _J	°C	-55 ~+175					-55 ~+150		
Power dissipation	P _d	W	1.42					1.19		

■ Electrical Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	G1AQ	G1BQ	G1DQ	G1GQ	G1JQ	G1KQ	G1MQ
Maximum instantaneous forward voltage drop per diode	V _F	V	I _{FM} =1.0A	1.1						
Typical junction capacitance	C _J	pF	V _R =4V,1 MHz	10						
Maximum DC reverse current at rated DC blocking voltage per diode	I _{RRM}	μA	T _a =25°C	5						
			T _a =125°C	50						



G1AQ THRU G1MQ

■ Thermal Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TYP	MAX
Thermal Resistance	R _{θJ-A}	°C/W	85 ¹⁾	105 ¹⁾
	R _{θJ-L}		35 ¹⁾	45 ¹⁾
	R _{θJ-SP}		17 ²⁾	20 ²⁾

- Note:
- (1) Thermal resistance between junction and ambient and between junction and lead mounted on P.C.B with 3mm*3mm copper pad areas.
 - (2) Thermal resistance between junction and cathode tab solder point.

■ Characteristics(Typical)

Fig.1:Forward Current Derating Curve

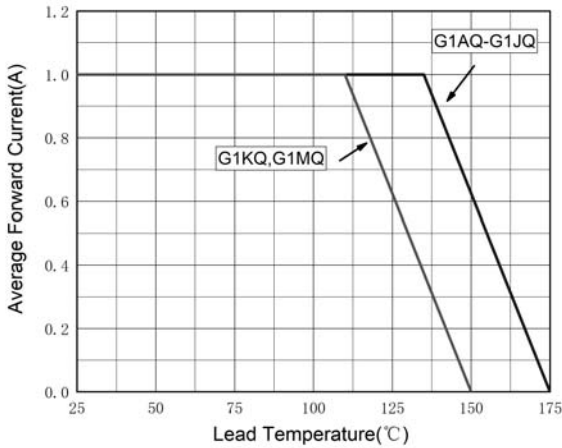


Fig.2:Forward Surge Current Capability

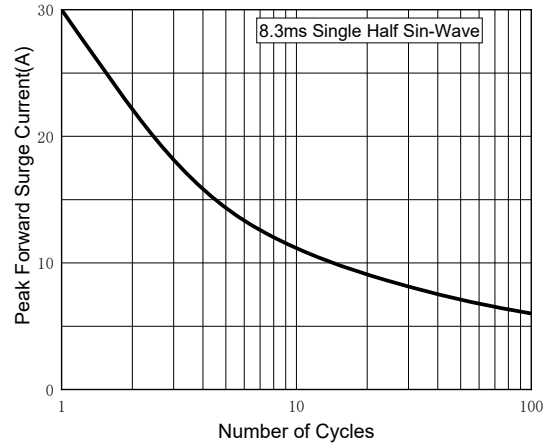


Fig.3:Typical Instantaneous Forward Characteristics

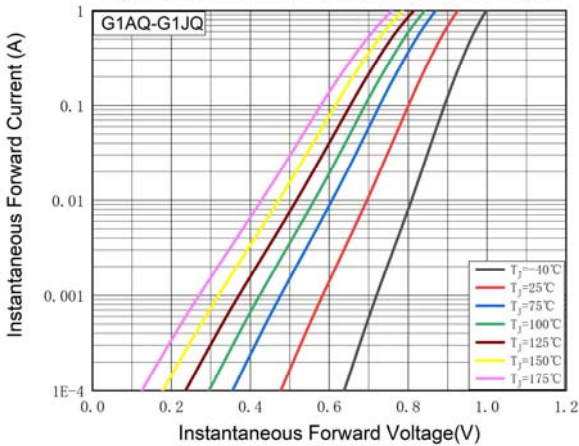


Fig.4:Typical Instantaneous Forward Characteristics

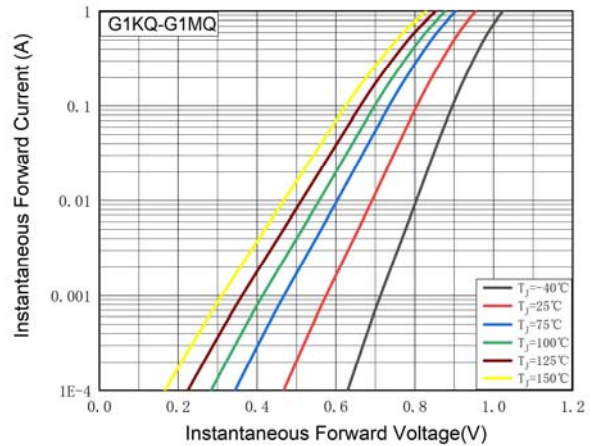


Fig.5:Typical Reverse Leakage Characteristics

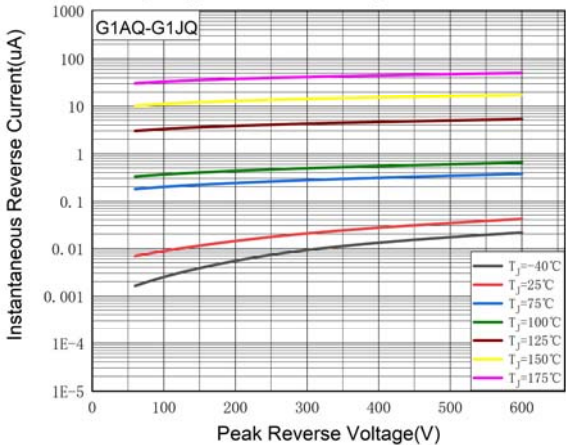
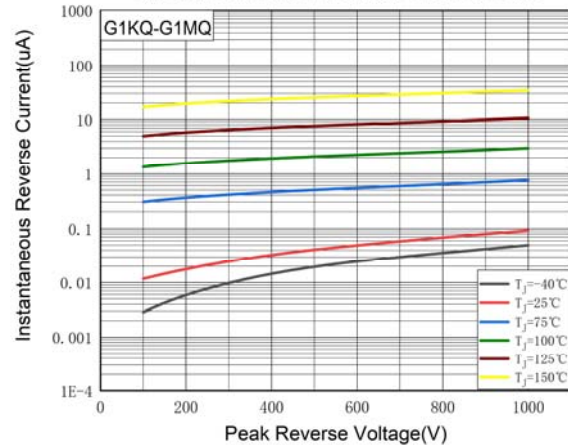


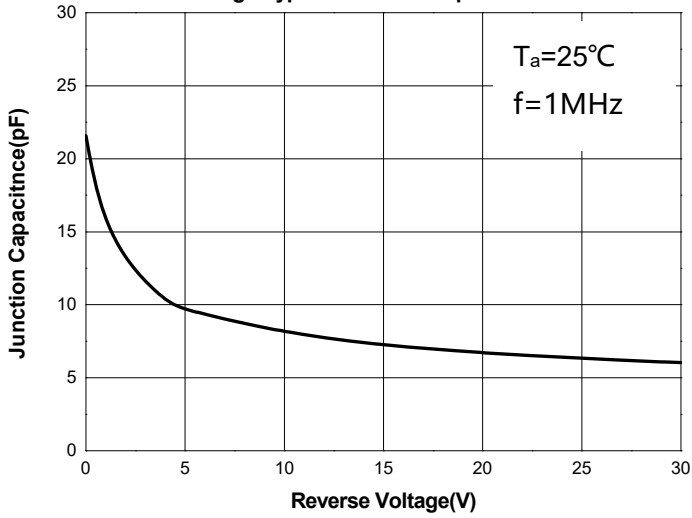
Fig.6:Typical Reverse Leakage Characteristics



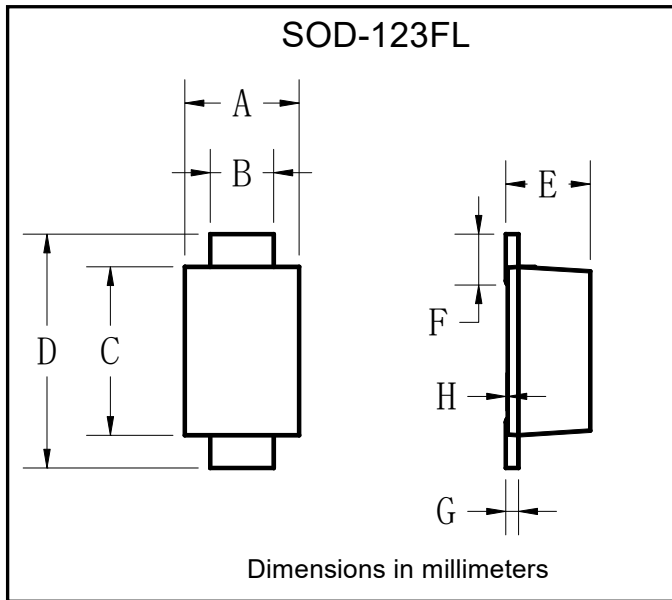


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Fig5: Typical Junction Capacitance

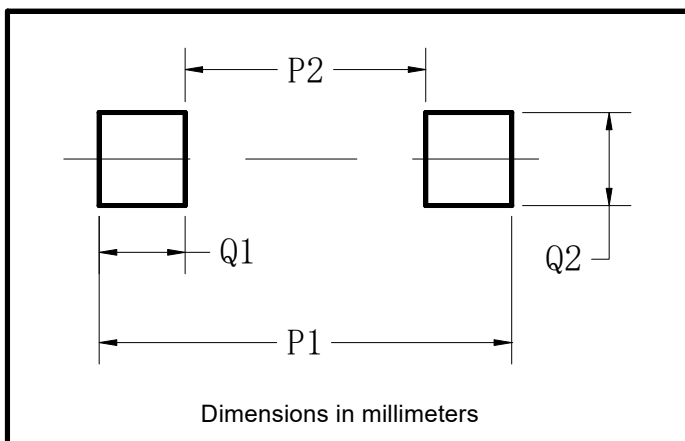


■ Outline Dimensions



SOD-123FL		
Dim	Min	Max
A	1.60	1.90
B	0.90	1.10
C	2.55	2.85
D	3.60	3.90
E	1.00	1.20
F	0.40	0.90
G	0.10	0.25
H	0.02	0.05

■ Suggested pad layout

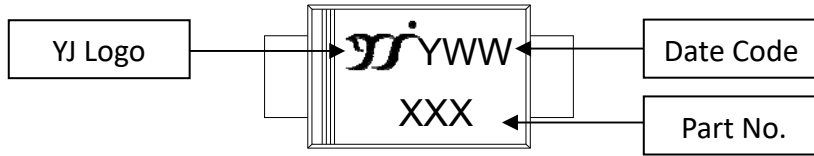


SOD-123FL	
Dim	Millimeters
P1	3.90
P2	1.90
Q1	1.00
Q2	1.50



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■ Marking Information



Note:

1. All marking is at middle of the product body
2. All marking is in laser printing
3. XXXX is marking code, like G1MQ marking code is G1M.
4. Body color: Black
5. YWW is date code, "Y" is year. "WW" is week.

For instance:

The 17th week of 2019, date code is 917

The 17th week of 2020, date code is 017

■ Packing Information

PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
G1AQ ~ G1MQ	F1	0.0169	3000	30000	120000	7" reel



G1AQ THRU G1MQ

Disclaimer

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G1AQ THRU G1MQ

ISSUE	REVISION	DATE
1.8	Tj changed from 150°C to 175°C for G1AQ thru G1JQ	22-Dec-28
1.9	Add -40°C、175°C characteristic curve and $R_{\theta J-SPA}$	23-May-23
2.0	Update R_{JL} data and I_O-T_L curves	30-May-23
2.1	Add Pd, Change the I_{RRM} when $T_a=125^\circ C$, Updated T_L, V_F and V_R characteristic curves	16-Oct-24